Unlocking the Great Pyramid

Bernard I. Pietsch and
Suzanne Thompson

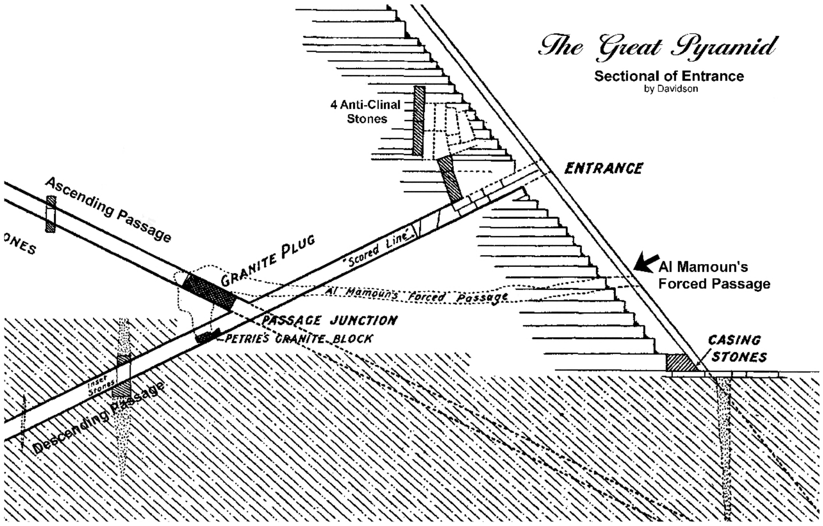

Fig. 1 Sectional view showing Al Mamoun's forced entry, 820 AD.

Entry by force

By 820 AD the Great Pyramid was already ancient when Al Mamun broke in. Determined to acquire the maps and astronomical charts he believed were hidden inside, but unable to locate the entrance, Al Mamun ordered his men to tunnel directly into the middle of the north face of the Pyramid. After weeks of excavation, the workers intersected an inner passageway; but it was for naught. The chambers to which the passage led were empty. Al Mamun soon abandoned his mission, convinced that if there had ever been a treasury inside the Pyramid, it had long since been looted.

Like Al Mamun and all explorers since, we too are intrigued by the impenetrability of the Pyramid and wonder, “Who built it and why?” There are official answers to these questions and today, every tourist knows that the price of a ticket will get them inside the building. However, there is another “way” into the Pyramid through an opening sought by many but accessed by few--entrance into the *mystery* of the Pyramid. Entry here is achieved neither by force nor ritual; membership in a secret society has no advantage because the answers to our questions will not be found *inside* the Pyramid. They will be found *in the body* of the Pyramid itself, in the measures and geometry of its stones and spaces. To access what is in the Pyramid, one must be equipped to “read” from the great library that it is; the lines, angles, areas and volumes of the stones are the books, written in architectural language. Recovering the lexicon of that language is the object of our study.

Entry by Geometry

In previous chapters, we described how the architecture of the Pyramid lays out indicators or “clues” designed to prepare us to recognize the next steps in our exploration. Some hints are straightforward; others not. One early directive requires receipt of a single instruction implied by the shape of the entire Pyramid seen from afar. At a distance, the whole of Cheops appears to be truncated, with no apex or point at the top. But if an observer is able to see beyond the appearances, the architecture visually guides the mind’s eye to *geometrically complete* the form--to extend the lines of its sides beyond its flat top until they intersect in the space above the Pyramid. Here a non-existent apex suddenly “appears”. The empty apex is a virtual container of information discerned through geometry and measure. As such it enjoys a status of perfection denied to the physical Pyramid, in a domain that can never be destroyed, hidden or lost. The apex persists at a level that can always be conceptually reconstructed in the empty space above the physical body of the Pyramid, regardless of the condition of that body. The power of the contents of this *highest* realm of the Pyramid are reserved for the recipient of its discovery—the engaged observer.

Such invitations are the hallmark of the Pyramid builder's art. Nothing is ever withheld, but to receive the communication initiated by the architect, one must first fulfill that which is requested. Participation is required.

Entry by Measure

As we see it, the Pyramid is a model of the Earth, architecturally designed to guide us to generate a geometric framework for establishing our *orientation* in the cosmos. To be effective as a model, and before we can know *where* we are on the Earth, in the Solar System, or in the Galaxy we also have to know *when* we are. Necessarily, the Pyramid is also a model of Time. In previous chapters we discussed how the keys to reading the Pyramid filter through what we have called the **canon of measure.** The canon emerges as a catalog of units derived from the observation of physical *dynamics*—as expressed by the pendulum, as found in the human body in the metrics of heartbeat and breath, as witnessed in the cyclical motions of the planets. The canon cross-references Earth measure, astronomy, mathematical constants, and biological time through number, and geometry--the Pyramid's idiom. When we use the canon to unlock the architect's understanding of world process, we find that his understanding is holographic and his vocabulary expansive. A single numerical term can have meaning in more than one category; that single term can be repeated in various forms or be reiterated in dissimilar units—a process which is both practical and mysterious--practical in the sense that one number can be used to represent more than one idea; mysterious in the breadth and integration of the ideas expressed.

Whether born of genius or cultivated by tradition, the elegance of Pyramid architecture is a marvel to behold. If we were to offer a summation of the architect's message modeled in stone, there may be none better than the "signature" carved under the arch of the great Anti-Clinal Stones, above the entrance to the Pyramid. (Fig. 2) There, a single wave-form symbol announces the *logos* of the Pyramid: **Cycle.**

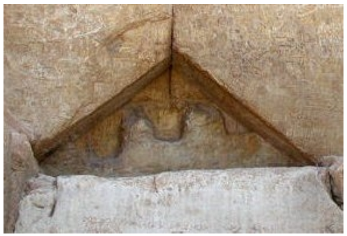

Fig. 2 The wave form name of the Pyramid over the entry: "***Cycle.***"

Knowledge of the cycles of Time and all that it portends, unifies Pyramid design. From one second of the heart beat to the rotation of the galaxy, the Pyramid is the record of the relentless effect of Time and its influence on life, where all advances, declines and fades away. The physical aspects of life subject to the effects of Time are represented by the 206 outer courses of the Pyramid, themselves now aged and worn. In juxtaposition, Pyramid design also addresses the unchanging, the perfect and the indestructible, free from Time, qualities preserved by the empty places of the Pyramid--in the space of the completed pyramidion above the stony portion, in the empty chambers, passages and sarcophagus. To those who can see it, the timeless complement of the Pyramid is sustained in space. The spaces apprehended by geometry and number are "supported" by the physical body of the Pyramid. The tension between temporal and timeless is transcended in the union of the two components,. The mystery of above and below is reconciled *in the one Pyramid.*

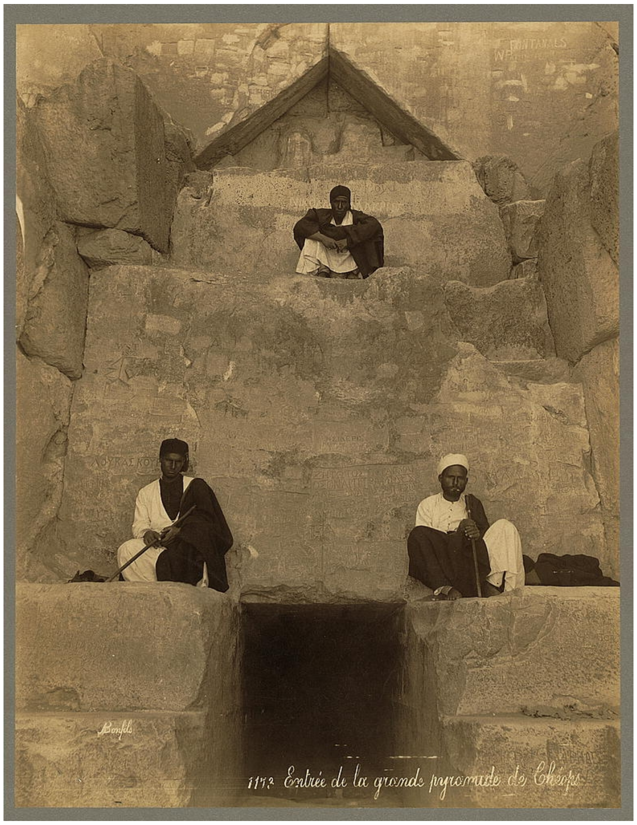

Fig. 3 19th Century Photo of Entrance passage.

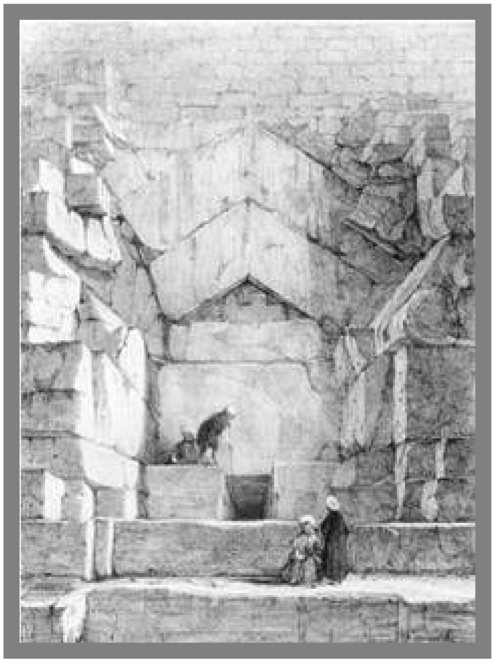

Fig. 4 Drawing of Entrance and Anti-Clinal Stones above.

Restoring the Anti-Clinal Stones

Ancient literature records a time when the Pyramid was said to be "covered in figures". Contrary to the usual interpretation which is taken to mean painted with animals and designs, we suggest that the "figures" implied were actually the geometric shapes and measures of the stones themselves. As the arrangement of the visible stars is to the *mythology* of the constellations, the arrangement of stones in the Pyramid and the "figures" therein are to the gods, the numerical icons of the *metrology* of the Pyramid. The metrological icons are not literally portrayed; the names of the gods must be discovered. They are figurative--abstract, metaphoric, numeric. We find their names in the pantheon of the canon of measure. The numbers in the canon are eternal and unchanging figures and as Plato phrased it, seen only dimly in the light of the sensible world, where all is changing, moving, becoming. In the ideal world of Plato's forms, only *space* can entertain the unchanging and perfect. We find those spaces indicated by the Pyramid and written in the language of the canon of measure.

The "gods" of the canon inhabit the dimensions of the Earth as well as the heavens. In the canon we find astronomical notations of the most rarefied vision: the elements of the planets, orbital designations, the precession of the equinoxes, the rotation of the galaxy and more—all namesakes written in the book of the Pyramid.

In the canon, the ordinances of the heavens are reflected in the terrestrial measures of the Earth: the common cubit, the sacred cubit, the mile, the second of arc, the circumference of the Earth. All measures emerge from the nucleus of the canon; but the center of the canon is not easily found. It is only through trial and error coupled with an intuitive glimpse of the totality, that one finds the germinal essence of the canon, the alpha of the system, the origin. We find this to be the ***inch*** and its siblings the ***centimeter*** and the ***second of time***. This triad unlocks the whole; with their aid, the "gathering place of the gods"[a] can be found in the heart of the Pyramid.

Liberated from the constraints of arithmetic, and freed to use mathematic functions as stepping-stones between numbers, we unmask the ancient gods in the entrance, in the passages, in the chambers. We honor them by re-covering their names and functions. In return they will lead us to unexpected wonders and discoveries. In the Observations that follow we will show how the *number names* of the geometric attributes of each of the Anti-Clinal Stones are a manifestation of the deities--in different modalities. The *number* of the measure of a length may materialize as the *number* of an angle in the same stone, in another stone, or in another feature of the Pyramid.

Equipped with the instruments of geometry and number, we pause at the threshold of the Pyramid to behold the great Anti-Clinal Stones above us, and know that as we pass, we will have been enriched by their counsel and prepared to understand that which lies within.

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[a] Plato's *Critias*: We regard Plato's story of Atlantis to be a veiled reference to the Giza Plateau and particularly to the King's Chamber in the Great Pyramid.

The Measure of Intention: 1883

In his survey of the Great Pyramid, Sir Flinders Petrie dismissed the measures of the four Anti-Clinal Stones as not worth reporting in detail, "*as the work of them is so rough*." Contrary to this opinion, we have taken Petrie's reading as a guide and refined the "rough" measures he gives. Though the stones are weathered and worn, each stone is unique in measure and angle; each can still be seen as a single work cut to precise proportions. With the aid of the canon we can see through the coarseness of form to the pristine intention of the designer.

The dimensions adopted in the applications which follow depart if at all, by slight amounts from Petrie's measures. Our *restored* measures correspond more fittingly to what we submit, was originally intended. The general size of the sloping blocks over the entrance to the Pyramid as Petrie reported them follow:[b] (Our adapted measures are boxed in *red* for comparison. The 10-digit trigonometric working figures referenced in the text, are in the appendix.)

	East Upper A		***West Upper B***		***East Lower C***		***West Lower D***	
Length on Top	**185"**	***185.3"***	**194"**	***193.67"***	**151+"**	***150.84"***	**167.7"**	***167.6"***
Length Below	**117.5"**	***117.38"***	**121"**	***120."***	**84+"**	***84.11"***	**107.6"**	***107.6"***
Breadth	**80.0- 91.5"**	***82 - 90"***	**88.3"**	***88.4"***	**82.6"**	***82.6"***	**81.6"**	***81.44"***
Depth	**33"**	***33"***	**33"**	***33."***	**33"**	***33."***	**33"**	***33."***

Fig.5 Petrie's measures of the Four Anti-Clinal Stones. (Our restored figures are in red.)

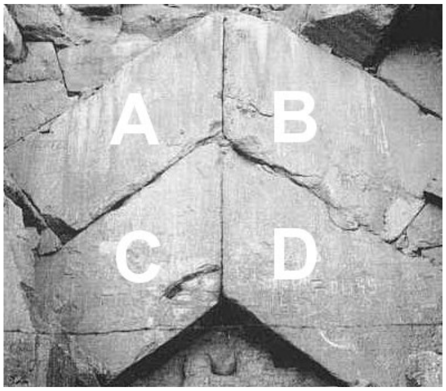

Fig. 6 Photo Anti-Clinal Stones, with identifying letters.

With the exception of Upper East Stone **A**, Stones **B**, **C,** and **D** are each formed by a rectangle and a right triangle, although there are no marks on the stones defining these discrete shapes. The division into rectangle and triangle, indicated in the following diagrams by a dotted line, is made geometrically by inserting a line perpendicular to the long side of the rectangle at the base of the triangle. Notice that in Stone **A**, all four sides of the polygon portion are different lengths. Fig. 7

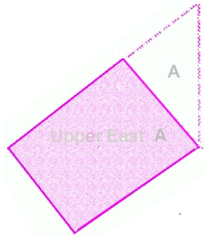

Fig. 7 Polygon portion of Stone A shaded.

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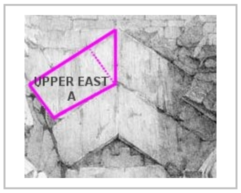
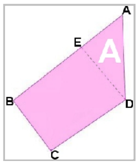
[b] Petrie, W.M.Flinders, The Pyramids and Temples of Gizeh 1883. Chapter 6, Section 34.



Stone A Upper East

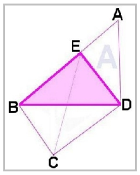
Book of the Earth

If the Great Pyramid is a model of the Earth, it is fitting to find that the first measures encountered in the Upper East Anti-Clinal Stone relate to Earth metrology. In this “stony volume” of Stone A we will find references to the size of the Earth, and the units with which to measure it, the angle of Earth’s astronomical orbit, and the length of Earth’s year. References to the metrics of the planet Saturn, source of canon measure will be named and more.

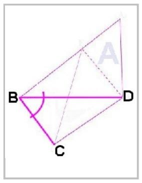


1. The equator could be likened to the largest “book” in the canon library of Earth measures (geo-metry). As the largest measure it “contains” all other designations. Not surprisingly we find it boldly displayed over the threshold of the entrance to the Pyramid in the area of the front plane of Stone **A**. The number of *square inches* in the area of the front plane of Stone **A, 13145.4** square inches corresponds to the number of canon *feet* in the Earth’s circumference:

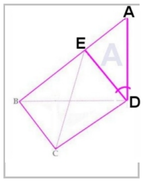
131,454,000 feet in the equator



2. In the canon system the circumference of the Earth at the equator is accounted as 25,000 miles. In Stone **A**, the triangle Δ**BDEB**, created by dividing the rectangular portion in half at the diagonal, has an *area* of **5258.16** square inches. **5258.16** is the canon measure of *feet* to the mile. 25,000 miles times the number of feet to the canon mile, 5258.16 is **131,454,000** feet in the equator, the number referenced above in the number of square inches in the front plane of Stone **A**: **13145.4** sq inches.



3. Noting that none of the sides in the rectangular portion of Stone **A** are equal in length nor parallel, see that the number for the *feet* to the canon mile **5258.16** is reiterated in the number of *degrees* in the angle formed by the diagonal in angle ∠**CBD** in Stone **A: 52.5816°**



4. Angle ∠**ADE** in Stone **A** is 37.28094241.° The cosine of the angle is **.795675.** Taking the circumference of the Earth at 25,000 canon miles and dividing it by canon π[c] gives us the diameter of the Earth at **7956.75** canon miles, the same number times 10^3 as the cosine of angle ∠**ADE**.

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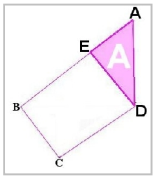
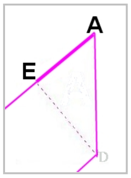
[c] Canon π: 3.141986363. Machine π: 3.1415927.

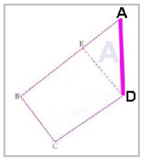
5. In Stone **A** the area of the triangular portion **ΔADEA** is 3083.144874 square inches. Interestingly, the **ratio** between the *number* for the area and the *number* of inches in the altitude (**AE**) of the triangle is **45**:

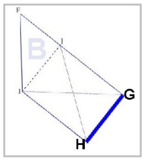




$$\frac{3083.144874\text{ sq"}}{68.51433053"} = \mathbf{45}$$

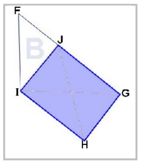
6. The hypotenuse in the triangular portion of Stone **A,** line **AD** is 113.1115092" long. The reciprocal of this number times 100 is the same number as the width of line **GH** in Stone **B**: **88.40833332**.

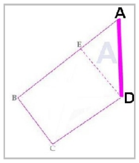




$$\mathbf{AD}\ \frac{1}{113.1115092} = .884083332\ \text{x}\ 100 = \mathbf{88.40833332}$$

7. The length **AD** above, 113.1115092" is 9.4259591 feet. The reciprocal of the length **AD** in feet conceals the number of square inches in the rectangular portion of Stone B and a referent to the canon period of the planet Saturn, anchor of the solar system: 10609 canon days.



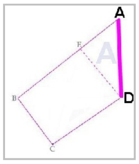


$$\frac{113.1115092"}{12} = 9.4259591'$$

$$\frac{1}{9.459591} = \mathbf{.10609}$$

$.10609\ \text{x}\ 10^5 =$ **10609** sq in. in GHIJ and number of canon days in Saturn's orbit.

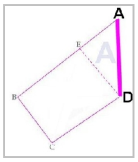
8. Another acknowledgment of Saturn's orbit is uncovered by multiplying length **AD** by 3, and multiplying the reciprocal of the product by 10,000:



113.1115092 x 3 = 339.3345276

$$\frac{1}{339.33452576} = .00294694444\ \text{x}\ 10^5 = \mathbf{29.46944}$$ calendar years in Saturn's orbit.

9. The number of the length **AD**, **113.1115092"** times three is also associated with the perimeter of the second pyramid on the Giza Plateau, Kephren:

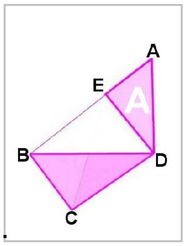


113.1115092 x 3 = 339.3345276

339.33452576 x 100 = **33,933.45276"** perimeter of Kephren Pyramid.

Note: The number designation for the length of the hypotenuse of the triangle in Stone **A,** line **AD 113.1115092"** will be met again in the interior of the Pyramid as a decimal portion of the volume of the Ante Chamber: 1,131,115.092 cubic inches.

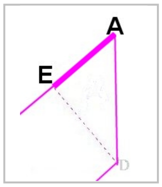
10. The area of the triangular portion of Stone **A** (Δ**ADEA**) plus the area of triangle Δ**BCDB** in the rectangular portion is a number of square *feet* which conceals the height of Cheops Pyramid to the top of the 206th course, but as *inches*:



ΔADEA 3,083.144874 sq " **+ ΔBCDB** 4,804.09126 sq " = 7,887.2395 sq "

$\frac{7{,}887.2395 \text{ sq "}}{144}$ = 54.7725 x 100 = **5477.25** inches to physical top of 206th course.

11. The altitude of the triangular portion of Stone **A**, line **AE** is a referent to the angle of the Earth's astronomical orbit of 23°39' 25." It is entered via the reciprocal of the natural logarithm of the number of inches in line **AE**:



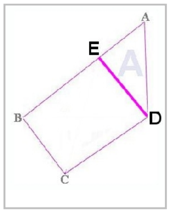
AE 68.51433053^{-e} = 4.227042928

$$\frac{1}{4.227042928} = .236572$$

.236572 x 100 = 23.6572

As a sexigesimal number, 23.6572 reads as **23° 39' 25".**

12. The width **DE** in Stone **A** is **90"** or **7.5** feet. Embedded in the number 7.5 lies a reference to the number of days in the solar year:

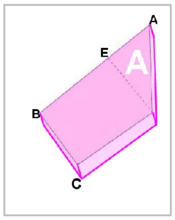


The square root of the reciprocal of 7.5 x 1000 is **365.1483**

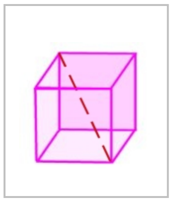
$$\sqrt{\frac{1}{7.5}} \times 1000 = \mathbf{365.1483} \text{ days solar year}$$

Reforming the Volume

Many examples in ancient sculpture can be deconstructed by deforming the *volume* of a shape into the corresponding dimensions and volume *of a cube*. By definition in a cube, all 12 edges are equal in length, all 6 planes are equal in area and the internal angles are identical.



13. If the volume of Stone **A** (433,798.2 cubic inches) were re-formed as a cube of the same volume, the edge of that cube would be **75.70000622**" in length. The major diagonal of the cube would be 131.1162569 inches or **10.92635474** feet. If a pendulum the length of the major diagonal (**10.92635474** feet) were swung, it would take 3.66310509 seconds of time to swing. After multiplying the number 3.66310509 by 100 we see a number representation for the days in Earth's sidereal year: **366.2582432** days.



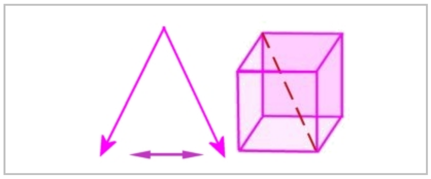
Volume Stone **A** **433,798.2** cu. in **.** The cube root of the volume gives the side length of the cube.

$\sqrt[3]{433{,}798.2}$ = **75.70000622"** as side of a cube.

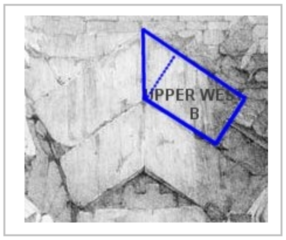
75.70000622 x the cotangent of 30° (1.732050808) = 131.1162569" or **10.92635474**'

10.92635474' as the length of a pendulum would have a frequency of **3.66310509** seconds

3.66310509 seconds x 100 = **366.310509** days sidereal year.



Volume of Stone **A** as a cube, its major diagonal as length of a Pendulum.

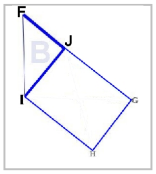


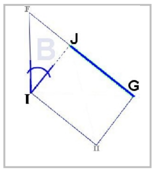
Stone B Upper West

Same and Different

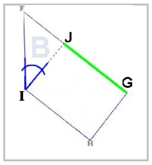
Different units, same number
Studying the details of the Anti-Clinal Stones, one begins to experience how the cross pollination between *form and number* transcends the limitations of either approach alone. The measure of a length, angle, area or the result of some mathematical operation may expose a numerical expression which is exactly and precisely a canon number or one that closely approximates a canon number. The exercise requires a degree of flexibility, but if one is alert, the proximity of a number to a *concept* may open the door to an unsuspected application of that number/concept. In the **B** Stone we find many examples of crossover numbers –where numbers of one type match number designations in dissimilar aspects of the same stone, and in other stones.

14. The ratio of the length of the base of the triangular portion of Stone **B** (**LI** 88.40833332”) to the altitude (**FJ** 73.67361111”) is **1.2**, the cotangent of the angle at ∠**FIJ**. 1.2 (times 100) is reiterated in the number of inches in the side length of the rectangular portion of the stone line JG, **120** inches.

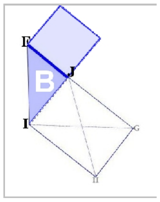




The above example said differently: In the **B** rectangle, the reciprocal of the length **JG** (120”) multiplied by 100 is .83333. Using .83333 as the *tangent* of an angle, how many degrees would be in the angle? 39.8055711°--the same number as angle ∠**FIJ** in the adjacent triangle.



15. The geometric consequences of the dimensions of triangle **ΔFIJF** in Stone **B** are such that a square with the side length of **FJ** would have an area that is **1.666** times the area of the triangle **ΔFIJF. 1.6666** and its reciprocal **.6** are factors in the translation of base 10 to the timing system of hours, minutes and seconds which we do find employed in ancient systems.

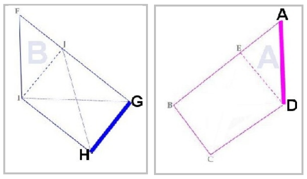


FJ 73.67361111^2 = 5427.80097 sq “

5427.80097 x **.6** = 3256.68054 sq inches: the area of **ΔFIJF**

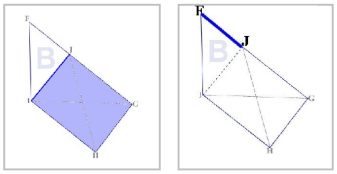
16. The reciprocal of the number of the width of Stone **B, GH** 88.40833332" times 10,000 is the same number as the length of the hypotenuse line **AD** in Stone **A.**

$$\frac{1}{\textbf{GH}\ 88.40833332} \quad \text{X } 10^3 = \textbf{AD}\ 113.111509$$

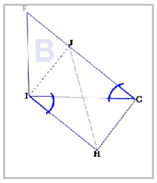


Note: 113.11509" previously referenced in Observation #9, also enjoys a one to one correspondence in two different categories: square inches and cubic inches found in the surface area and volume of a 6-inch diameter sphere. There are 113.11509 square inches on the surface of a 6-inch diameter sphere and 113.11509 cubic inches in its volume.

17. The area of the rectangular portion of Stone **B** is **73.6736111** *square* feet. 73.6736111 is the same number as the number of *linear* inches in the altitude of the triangular portion of the stone: **73.67361111**" Said differently, the number of *inches* in the height of the triangle **FJ** is the same as the *number* of square feet in the rectangle.



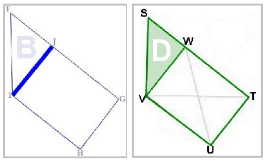
18. In the above example, there are two cases of the number **73.6736111** in Stone **B**: It is both the number of the altitude of the triangle in inches and the number of square inches in the area of the rectangle. There is a third case but found as the decimal expression **.736736111** of the *tangent* of the angle of the diagonals **GIH** and **JGI** in the rectangle in Stone **B**: 36.38041568.°



19. The square root of **73.6736111** times 10 is the canon assignment for the number of days in the orbit of the planet Mercury: 85.8333 days.

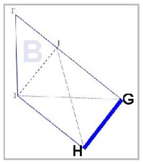
$$\sqrt{\mathbf{73.673611}} \text{ x } 10 = \mathbf{85.8333333} \text{ canon days in Mercury's orbit.}$$

20. Cross references using the system of degrees, minutes and seconds of arc are found in Stones **B** and **D**. The *number* for the inches in the base of the triangle in Stone **B** times the number of square inches in the *area* of the triangle in Stone **D,** divided by 100, is the number of minutes in 360 degrees: 360 x 60 = 21600



$$\frac{\text{Length GH } 88.4083333\text{" x Area } \Delta\text{SVWS } 2443.208586}{100} = 21600$$

21. There are 360° in a polygon. The width **GH** of Stone **B,** 88.40833332” times 360 is a number: 31827. The reciprocal of 31827, times 10,000 is *exactly* canon π: **3.141986363.**

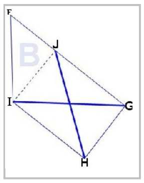


88.40833332” x 360 = 31827

$$\frac{1}{31827} = .0000314198636$$

$$.0000314198636 \times 10^4 = \mathbf{3.141986363}$$

22. The ratio between the internal angles of the diagonals in the rectangular portion of Stone **B** leads to an important bridge number, **1.22806554:** *the rate in seconds of time of a pendulum* ***1.22806554*** *feet in length-- Same number, different designation.*

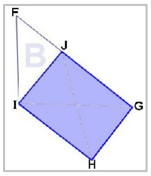


$$\frac{\angle \mathbf{O_4}\ 107.2391688°}{\angle \mathbf{O_3}\ 72.7608312°} = 1.473858451$$

$$1.473858451 \times 10 = 14.73858451$$

$$\frac{14.73858451}{12} = \mathbf{1.228}21541 \text{ very nearly } \mathbf{1.22806554}$$

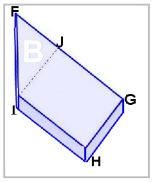
23. Albeit not perfect, another close approximation to **1.22806554** is found in the following manipulation of the *area* of the rectangular portion of Stone **B**:



Area □**GHIJG** $\frac{10609 \text{ sq “}}{25^{\mathbf{2}}} = 16.9744$

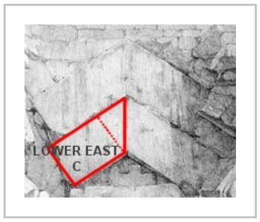
$$16.9744^{\mathbf{-10}} = \mathbf{1.229}794432$$

24. The number of cubic inches in the volume of Stone **B** harbors a referent to the inches in the canon common cubit but expressed as the number of degrees in an angle **20.6:**



$$\frac{457{,}567.4593 \text{ cu “}}{1000} = 457.5674593$$

$$457.5674593^{\mathbf{-10}} = 2.660455131 \text{ cotangent of the angle } \angle\mathbf{20.60001243°}$$

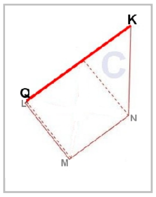


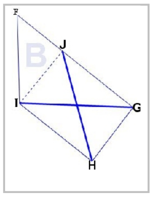
Stone C Lower East

Almost Perfect

When first working on the **C** Stone, I assumed that the portion below the triangular area was square. After rechecking Petrie however, I realized that what I had taken as the longest length KL was actually an inch and a half short of Petrie’s measure. As it turns out, I was wrong, but not in error. The oversight precipitated me into an appreciation of the *quality* of the relationships expressed in the Anti-Clinals and the **C** Stone in particular. One has to get beyond what Petrie described as the “rough” condition of the stones and visualize their *perfect* forms. There are no visible signals, no lines, no arrows directing us to deconstruct the stones into triangular and rectangular sections. In the case of Stone **C** there is no overt indication that a square should be partitioned off within the rectangle portion. Once done however, it becomes clear: The excess 1½ inch length in the rectangular portion of Stone **C,** which makes the small rectangle **LMRQ**, and lies outside the contrived square part in the rectangular portion, has a number of correspondences which affirm its intentionality both within Stone **C** and with the other Anti-Clinals.

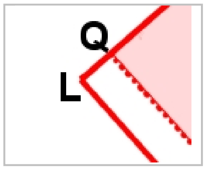
25. One confirmation that the square NPQR was a proper pre-perception is that the side of the square plus the length of the altitude of the triangular portion of **C,** line **KQ**, is nearly the same length as the diagonals of the rectangular portion of Stone **B**, lines **GI** and **HJ.**

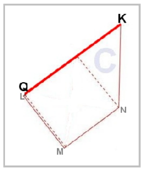




Length KQ in **C**: **149.4150999"**
Length of diagonals in **B**: **149.0504391"**

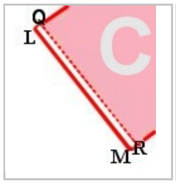
26. The ratio of the length of stone that falls *outside* the square **NPQR** in Stone **C**, extends **1.493457766** inches beyond the squared off portion: 1/100th of the side length **KQ**.

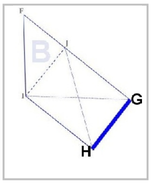




Length **QL** **1.493457766"**
Length **KQ** **149.4150999"**

27. The number of square inches in the area of the little rectangular portion at the bottom of Stone **C** (**LMRQ**) which is outside the contrived *square* portion of the rectangle (**NPQR**) is related to the width of Stone **B** (GH 88.40833332”). The connection is by way of 360. 360 divided by the width of Stone **B** is **4.072014320.** 4.072014320 times 1000 and divided by the depth of the stones (33) is almost exactly the same number as the area of the little rectangle **LMRQ** in **C**: **123.3954741** square inches.

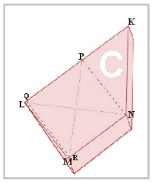


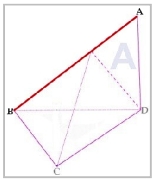


$$\frac{360}{\mathbf{GH}\ 88.40833332} = 4.072014320$$

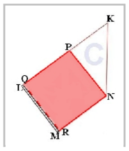
$$\frac{(4.072014320 \times 1000)}{33} = \mathbf{123.3943736}$$

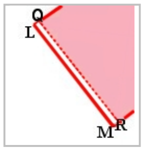
28. The volume of Stone **C** is **185.4225091** cubic *feet*. See that the length **AB** in Stone **A** is nearly the same number as the cubic feet in **C**, but in linear *inches*: **185.3623307"**, a departure of .0601784 from the *number* of the volume of **C.**

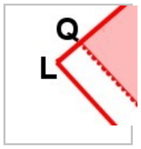




29. The side length of the devised square in the rectangular portion of Stone **C,** **□NPQRN**, is determined by the width of the stone, **PN** 82.62401317". The *difference* in the length of the top side of the whole stone (**KL**) and the length from the apex of the triangle to the bottom of the square portion (**KQ**) is the line **LQ** at 1.493457766". **1.493457766"** is nearly 1/100th of the length of the entire side of the stone line **KL** which is **149.3561339.”** The difference between the two numbers is a scant .0103573 of an inch.



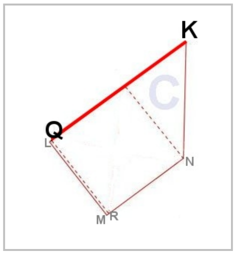




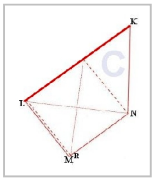
KL 150.8495917
- KQ 149.3561339
LQ 1.493457766

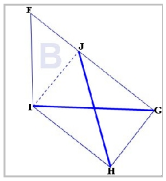
1.493457766 x 100 = 149.3457766

149.3561339
149.3457766
difference .0103573

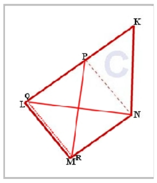


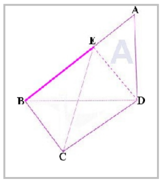
30. Line **KQ** in Stone **C** 149.3561339" is also very close to the lengths of the diagonals in the rectangular portion of Stone **B,** lines **GI** and **HJ**:149.0504391”.





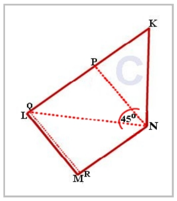
31. The diagonals (**NQ** and **PR**) of the square within the rectangular part of Stone **C** are **116.848"** in length, matching the side length (**BE**) in the rectangle in Stone **A 116.848"**

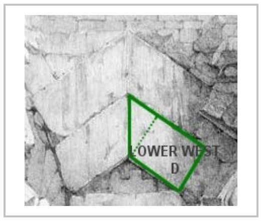




32. Because it is a square, the ratio of the side length to the diagonal length of □**NPQR** gives us access to the cosine of 45°:

$$\frac{PN\ \ 82.62401317''}{NQ\ 116.848''} = .7071067812 \text{ cosine of } 45°$$

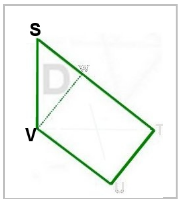




Stone D Lower West

Time and Length

33. The hypotenuse of the triangular portion of Stone **D,** line **SV** is a reference to the length of the canon handbreadth. To get the handbreadth, multiply the length of **SV** by the cosine of 45 degrees. Multiply the result by 1000. The common log of that number is very close to the number of inches in the handbreadth:



Length **SV** (101.1559209") x the cosine of 45° (0.7071067811) = 71.52803763

71.52803763 x 1000 = 71,528.03763

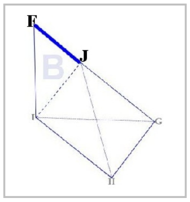
The common log of 71,528.03763 (7152.803763^{-10}) is **4.854476**

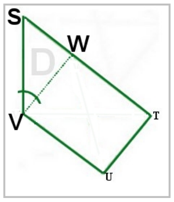
The reciprocal of **4.854476** is the number for the canon common cubit:

$$\frac{1}{\mathbf{4.85436893}} = .206 \times 100 = \mathbf{20.6''} \text{ canon common cubit}$$

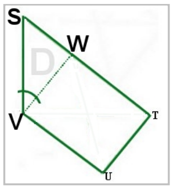
Note: **4.854476** is a number very close to the measure of the canon handbreadth, **4.85436893** inches. The canon handbreadth is bound via its reciprocal to the canon common cubit: **20.6"** Expressed as minutes of time, 20.6 refers to the number of minutes difference between the solar day of 1440 minutes and sacred day of 1460.6 minutes. Also $\mathbf{4.85436893}^{10}$ = 71510.35467. **71510.35467** cubic inches names the volume of space in the coffer in the King’s Chamber.

34. A fifth occurrence of the number of the length of line **FJ** in Stone **B**, **73.6736111"** shows up again almost perfectly as the *tangent* of an angle in the triangular portion of Stone **D**. The tangent of angle ∠**SVW** (36.38041558°) is **.736736143**, a difference of .000000032.





35. In Stone **D,** the tangent of angle ∠**SVW** (36.38041558°) is **.736736143** The reciprocal of the anti-common log of **.736736143**, divided by 360 contains the number for the number of seconds of precession per year in the precession of the equinoxes.

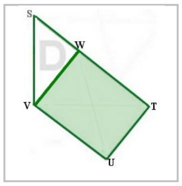


$$.736736143^{\mathbf{10}} = 5.454263488$$

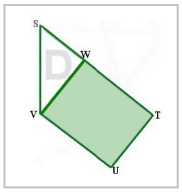
$$\frac{1}{5.454263488} = .183342911$$

$$\frac{.183342911}{360} = .000509285$$

$$.000509285 \times 10^4 = \mathbf{50.92} \text{ sec/yr}$$



36. In Stone **D**, the area of the rectangular portion is **8763.6** square inches. We recognize **8763.6** as the number of hours in the canon year of 360 canon days. (The solar year of 365.25816 days of 24 hours each would have a total of 8766.19584 hours, a difference of 155.7504 minutes of time.)



37. The number of square inches in the Stone **D** rectangle divided by 144 inches to the square foot renders the area as **60.8583333** square feet. Note that the altitude of the triangle portion of Stone **D** is **60** inches. Ignoring the gender difference between square feet and inches and extracting the ratio of the two numbers, we find our old friend **K, 1.014305555**.

$$\frac{60.8583333}{60} = 1.014305555\ \mathbf{K}$$

K is the ratio between days in the solar year and degrees in the circle[d]. Since there are 1,296,000 seconds of arc in the circle, and if each canon second of arc is **101.430555** feet in length at the equator, the canon equator would be 131,454,000 feet in circumference, the perfect canon value. The introduction of **K** is an indispensable tool which enables us to decipher what lies inside the Pyramid and to relate linear measure to measures of time.

Number as Time

The assignment of number to an interval of *time* is of paramount address in metrological process. Canon units may manifest both as distance and as time. (20.6 *inches* in the common cubit is also 20.6 *minutes* difference between the solar and sacred day.) Conversion between modes of measure is characteristic of the canon system; the function of the pendulum is fundamental to that process. The link between physical measure as length and time as duration is the action of the pendulum. The node of this cross over is the pendulum which is **1.22806** feet in length, which beats a period of **1.22806** seconds of time.

The single attribute of the height of an object for example, used as a pendulum length can deliver a *period of time*. The height of the object, exercised as the length of the swinging cord of a pendulum apparatus, suddenly becomes an *action*; a once static feature of height becomes a dynamic participant in time.

Although absolute and rigorous numerical results may not always be attained by the pendulum method, the period of time derived from the swinging pendulum can convey an *idea*. Exactitude is not at issue here. There is no pendulum which will be absolutely accurate all the time.[e] What is of interest is the *association* between the function of the pendulum at a place *and* a particular architectural feature, e.g. the height of a doorway, wall, tower, or the measure of the perimeter of a structure. Is there significance between an architectural measure and that length used as a pendulum frequency?

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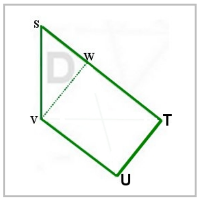
[d] **K** More on this essential ratio found in **www.scribd.com/doc/242361054/Art-Measure-and-Synchronicity-Introduction-to-the-Canon-of-Measure**

[e] In an ordinary grandfather clock, a slight modification of the ratio of the pendulum’s length to its frequency in time must be made by adjusting a small screw at the bottom of the pendulum. The necessity of adjustment is

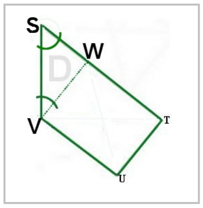
Lengths and heights activated as pendulum frequencies open the world of architecture to concepts having to do with time. The Pyramid designers were expert in the art of constructing three dimensional buildings with four dimensional significance. We will continue to uncover more examples of this important cross-over method of expression which melds number with time, mathematics and function.[f]

38. In the **B** Stone we saw the following referent emerge both from the ratio of the diagonal angles and the area of the rectangular portion. Here we find it again but through the number of the width of Stone **D**, line **TU** which is **81.4402862"** in length. The reciprocal of 81.4402862 is very near to an indispensable canon transformer between a measure of time and a measure of length: **1.228068554.** If a length of ***1.228068554 feet*** *were a pendulum, that pendulum would have a period of the same number--* ***1.228068554 seconds of time.***



$$\frac{1}{81.4402862} = \mathbf{1.2278}9352$$

Another close indicator of the above ratio number **1.228068554** is derived from the ratio of two angles in the triangular portion of Stone **D**, angle ∠W**S**V and angle ∠S**V**W.



$$\frac{\angle WSV \quad 53.61958428^\circ}{\angle SVW \quad 36.38041572^\circ} = 1.473855482$$

$$1.473855482 \times 10 = \frac{14.73857482}{12} = \mathbf{1.2282}13051$$

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testimony to the pendulum's sensitivity to moment, its location, latitude, altitude, and temperature. It is also an affirmation that there are no perfect pendulums.

[f] An epitome example is demonstrated by the number **9.771441472**, the number of inches in the length of a pendulum which will beat *one second* of frequency. We find it most notably commemorated as one of the heights of the two obelisks at Luxor: Obelisk **A** is **977.1441472"** or **81.42867893 ft.** in height. A pendulum 81.42867893 ft. in length has a period of 10 seconds. A pendulum **9.77144142"** in length (one hundredth the height of Obelisk **A**) has a period of 1 second.

The second, Obelisk **B** is 77.74897268' in height.

The square root of the ratio of two lengths is the ratio of their *times* if they were pendulums, a lawful relationship I stumbled upon while pursuing the connection of the obelisks to Time. The interested student will no doubt discover more intrinsic correspondences between these and other obelisks. Refer to: http://www.scribd.com/doc/290096677/45-Thumb-Ring Appendix XIII

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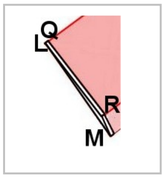
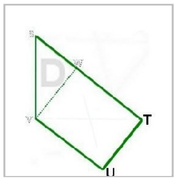




39. The number of width of Stone **D**, line **TU 81.4402862"** approximates an attribute found in another stone— the volume of the little portion of Stone **C** that lies *outside* the derived square part NPQR:

TU $\frac{81.4402862}{2}$ = 40.7201431

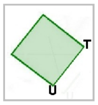
40.7201431 x 100 = **4072.01431**cu”

The volume of □**LMRQL** portion of **C**: **4072.050645** cu”, a difference of .036335003 cu.”

The ratio of the two heights: $\frac{\textbf{A}\ 81.42867893'}{\textbf{B}\ 77.74897268'}$ = 1.047328037

$\sqrt{1.047328037}$ = 1.023390462

40. If the line **TU 81.4402862"** is taken as one side of a square, that square would have a perimeter of 325.761448 inches, one tenth the number of the area of the triangular portion of Stone **B.**

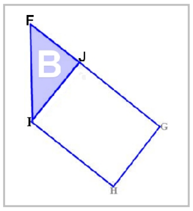


81.4402862 x 4 = 325.761448

325.761448 x 10 = **3257.61448**

Area of triangle **ΔFIJF** **3256.68058 sq"**

Difference of .09339 sq" of what was derived from line **TU** in **D.**



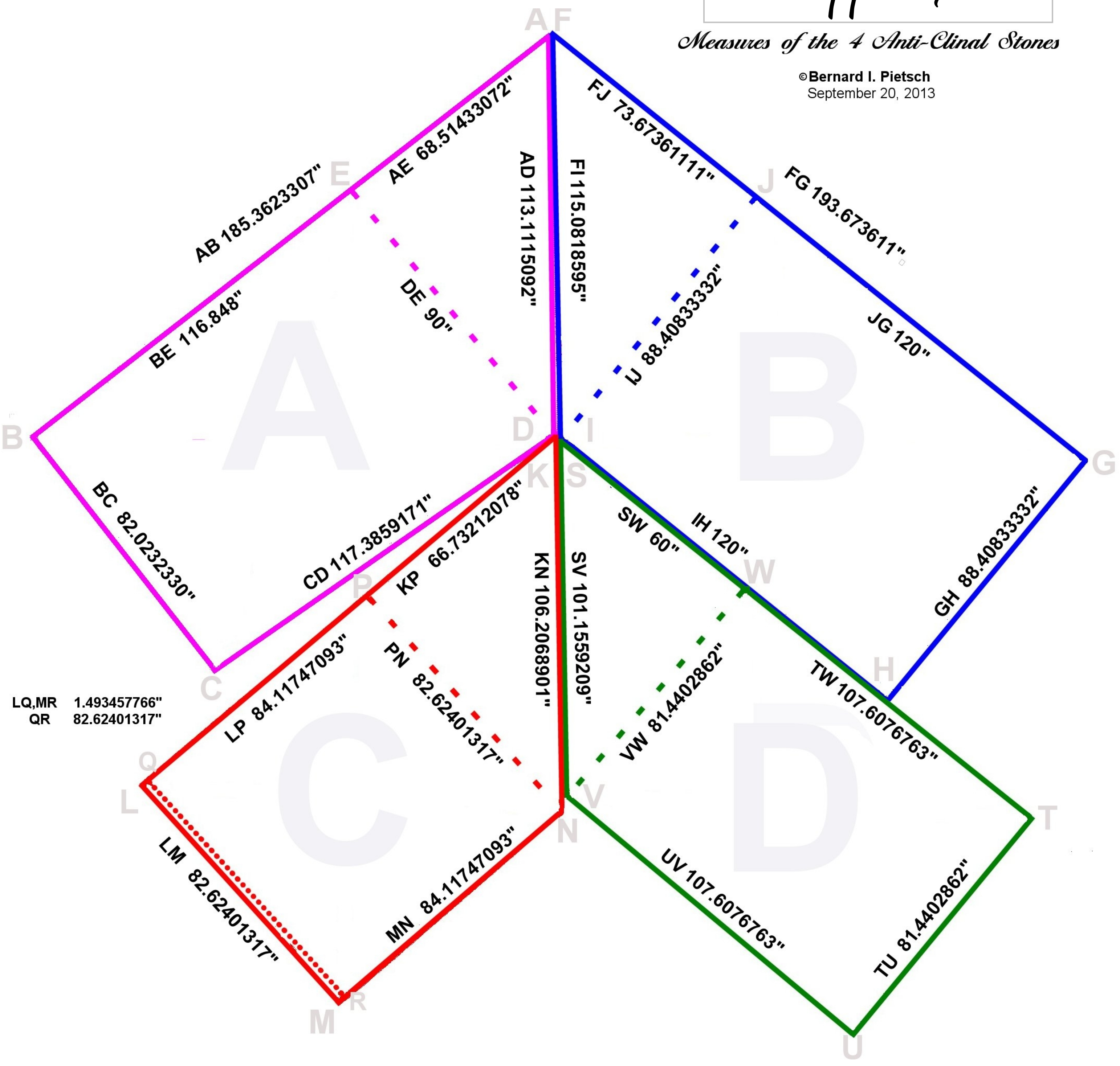
During the Age of Enlightenment the *commensurability of measure* was a principal scientific pursuit, a quest fully realized in canon metrology millennia before and lost to the modern world. As we have been discovering, this ancient canon (which departs just slightly from many modern equivalents) is populated by correspondences which cross-over categories—units of linear measure commensurate with units of time, units of weight with units of periodicity, elements of geometry corresponding to calendrical measures. Indeed, the “figures” covering the Pyramid are these same canon guides, translated into geometry, and embodied in stone and space.

As we study the various features of the Pyramid, we will recover more terms rooted in this ancient canon. Each element of the Pyramid’s architecture will contribute more detail, complexity and synthesis to our understanding. Poised like the great Anti-Clinal Stones under which we passed to enter, the guardians of the canon, the measures, await our recognition.

Appendix

Measures of the 4 Anti-Clinal Stones

©**Bernard I. Pietsch**
September 20, 2013



Sides

AB	185.3623305"	58
BC	82.02323815"	57
BE	116.848"	56
CD	117.3859171"	55
AD	113.1115092 "	54
DE	90 "	53
AE	68.51433053"	52

Areas

ΔADEA	3,083.144874 *sq in*	51
□BCDEB	10,062.25512 *sq in*	50

Total Area

ABCDA	13,145.4000 *sq in*	49
	91.2875 *sq ft*	48

Diagonals

BD	147.4905255"	47
CE	142.9809723"	46

Upper Triangle

∠ADE	37.28094241°	45
∠AED	90°	42
∠DAE	52.71905759°	43

Lower Polygon

∠BED	90°	42
∠CBE	90.18619399°	41
∠BCD	93.71045854°	40
∠CDE	86.10334746°	39

Diagonal Angles in 4 Corners

∠BEC	35.00601166°	38
∠CED	54.9939885°	37
∠BDC	33.70794144°	36
∠BDE	52.39540602°	35
∠DCE	38.90266419°	34
∠BCE	54.80779435°	33
∠CBD	52.5816°	32
∠DBE	37.60459398°	31

Areas of Triangles from Diagonals

ΔBCDB	4,804.09126 *sq in*	30
ΔBDEB	5,258.16 *sq in*	29
ΔCDEC	5,270.154764 *sq in*	28
ΔBCEB	4,792.100362 *sq in*	27

Depth	33 *inches*	14
Total Volume	433,798.2 *cu. in*	16
	251.040625 *cu. ft*	15

Triangles From Diagonals

Sides

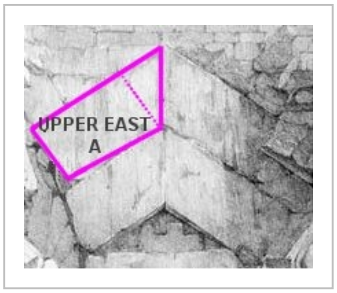
BO	70.24164978"	26
CO	68.26444007"	25
DO	77.24886908"	24
EO	74.71653223"	23

Center Angles

$\angle O_1$	72.61061043°	22
$\angle O_2$	107.3893944°	21

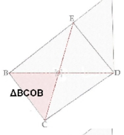
Areas

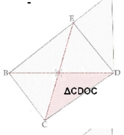
ΔBCOB	2,287.927176 *sq in*	20
ΔBEOB	2,504.173186 *sq in*	19
ΔCDOC	2,516.168282 *sq in*	18
ΔDEOD	2,753.986482 *sq in*	17

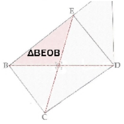


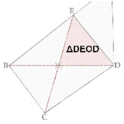
Anti-Clinal Stones

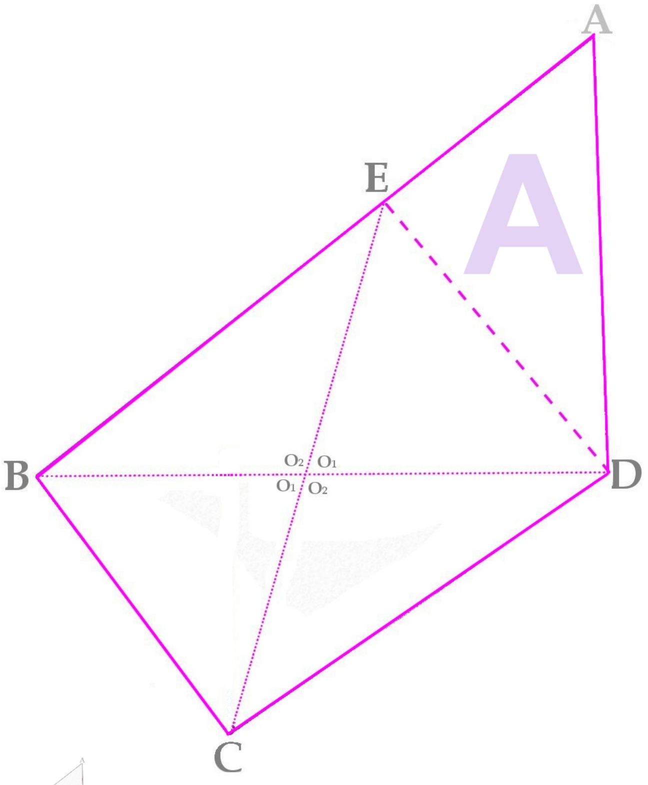
Upper East Stone **A**

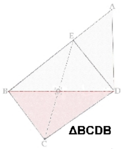


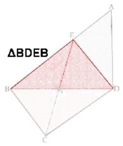


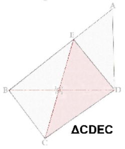


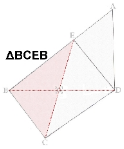


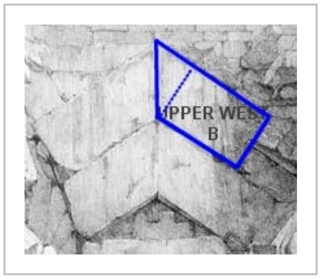








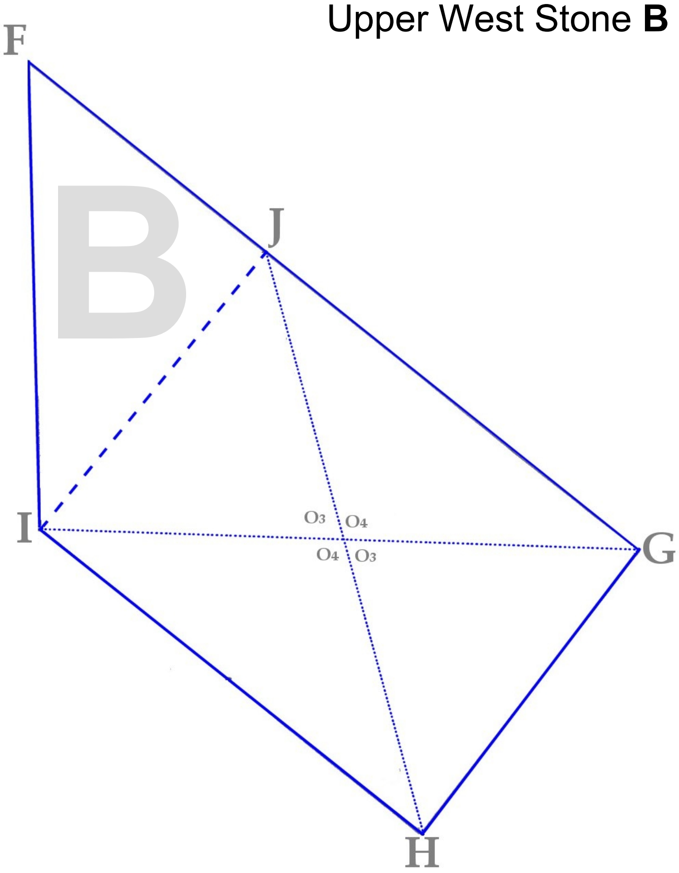


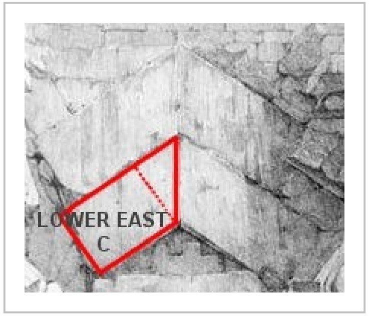


Anti-Clinal Stones

Upper West Stone **B**

Sides		
FG	**193.673611"**	**58**
HI/JG	**120"**	**57**
HG/IJ	**88.40833332"**	**56**
FI	**115.0818595"**	**55**
FJ	**73.67361111"**	**54**
Areas		
ΔFIJF	**3,256.680584*sq in***	**53**
□GHIJG	**10,609 *sq in***	**52**
FGHIF	**13,865.68058 *sq in***	**51**
Diagonals		
GI / HJ	**149.0504391"**	**50**
½ Diagonal	**74.52521956"**	**49**
Center Angles		
O_3	**72.7608312°**	**48**
O_4	**107.2391688°**	**47**
Triangle		
∠FJI	**90°**	**46**
∠FIJ	**39.8055711°**	**45**
∠IFJ	**50.1944289°**	**44**
Corner Angles		
∠GHI, ∠HIJ,	**90°**	**46**
∠IJG, ∠JGH	**90°**	**46**
Diagonal Angles		
∠GHJ, ∠JIG	**53.6195844°**	**43**
∠IGH, ∠IJH	**53.6195844°**	**43**
∠GIH, ∠JGI	**36.38041568°**	**42**
∠GJH, ∠JHI	**36.38041568°**	**42**
Depth	**33"**	**41**
Total Volume	**457,567.4593*cu in***	**40**

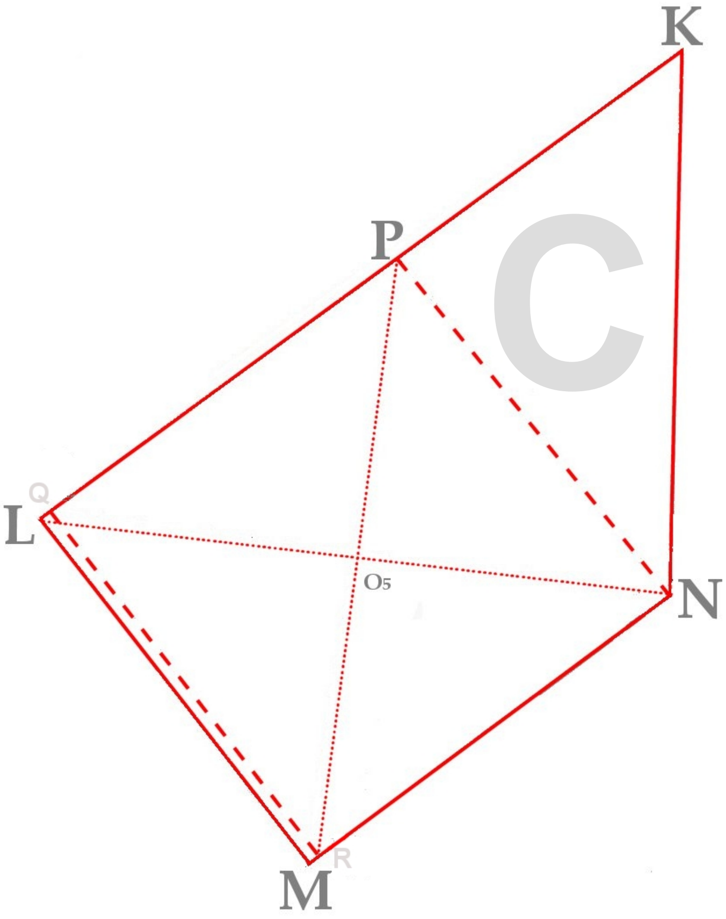


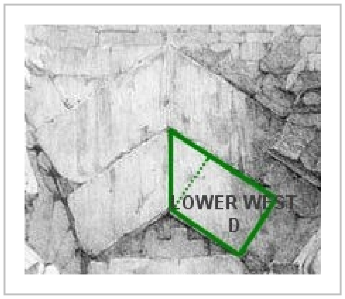


Anti-Clinal Stones

Lower East Stone **C**

Sides		
KL	**150.8495917"**	**58**
KQ	**149.4150999"**	**57**
KP	**66.79108671"**	**56**
KN	**106.2439495"**	**55**
MN,LP	**84.11747093"**	**54**
LM,NP,QR	**82.62401317"**	**53**
LQ,MR	**1.493457766"**	**52**
PQ,NR	**82.62401317"**	**53**
Areas		
ΔKNPK	**2,759.273814** *sq in*	**51**
□LMNPL	**6,950.123026** *sq in*	**50**
LMRQL	**123.3954741** *sq in*	**49**
□NPQRN	**6,826.727552** *sq in*	**48**
	(47.40783022 *sq ft)*	**47**
(Δ+□)KLMNK	**9,709.39684** *sq"*	**46**
(Δ+□)KNRQK	**9,583.565365** *sq"*	**31**
Diagonals		
LN, MP	**117.9087633"**	**45**
NQ, PR	**116.848"**	**44**
Inner Square □		
□NPQRN	*Diag. Cntr* **O_5** **45°**	**43**
□NPQRN	*Corner Angles* ***90°***	**42**
Triangle **Δ**		
∠KNP	**38.95116612°**	**41**
∠KPN	**90°**	**42**
∠NKP	**51.04883388°**	**40**
Diagonal Angles in Exterior Corners		
∠NMP, ∠LNM	**45.51316887°**	**39**
∠NLP, ∠LPM	**45.51316887°**	**39**
∠MPN, ∠LNP	**44.4868113°**	**38**
∠MLN, ∠LMP	**44.4868113°**	**38**
Depth	**33** *Inches*	**37**
Total Volume		
❐KLMNK	**320,410.0957** *cu in*	**36**
	(185.4225091 *cu ft)*	**35**
□ LMRQL	**4072.050645** *cu"*	**34**
	(2.35651079 *cu')*	**30**
∠KNP *cos*	**.7776820564**	**33**
❐NPQRN	**316,257.6571** *cu"*	**32**
(Δ+□)KNRQK	**9,586.001366** *sq"*	**31**





Anti-Clinal Stones
Lower West Stone **D**

Sides		
ST	**167.6076763"**	**58**
SW	**60."**	**57**
TW, UV	**107.6076763"**	**56**
TU, VW	**81.4402862"**	**55**
SV	**101.1559209"**	**54**
Areas		
ΔSVWS	**2,443.208586** *Sq In*	**53**
□TUVWT	**8,763.6** *Sq In*	**52**
SVUTS	**11,206.5086** *Sq In*	**51**
	(60.85833 *sq ft)*	**50**
Diagonals		
TV, UW	**134.9515924"**	**49**
½ Diagonal	**67.475795"**	**48**
Center Angles		
O_7	**74.23876612°**	**47**
O_8	**105.7612339°**	**46**
Triangle		
∠SVW	**36.38041572°**	**45**
∠SWV	**90°**	**44**
∠WSV	**53.61958428°**	**43**
Corner Angles All 90°		**44**
Diagonal Angles in 4 Corners		
∠TUW, ∠UWV	**52.88061694°**	**42**
∠TVW, ∠UTV	**52.88061694°**	**42**
∠WUV, ∠VWT	**37.11938306°**	**41**
∠TVU, ∠WTV	**37.11938306°**	**41**
Depth	**33"**	**40**
***Total** Volume*	**369,814.76** *Cu. In*	**39**
	214.01317 *Cu ft*	**38**
∠SVW *Tan*	**.7367361143 45**	**37**
Total Perimeter	**457.8115593"**	**35**
457.8115593^{10}	**2.660686754**	**36**